

curve/correlation to refer to. I'm expecting a value of around 0.002 / hour or so at room temperature (and going down with temperature from there).

If, when accurate CO₂ volumes are attained, the model still has discrepancies, a final 'data filter' or normalization curve can be used to help report the correct values. This final adjustment of 'fine tuning' will help us compensate for other subtle deficiencies (in the process or the calculations) that we are stuck with and need to correct. Some examples would be: 1) the evaporation of ethanol with the CO₂ will lower the ethanol yield, 2) organic acids produced at the start of the fermentation will make the CO₂ volumes observed lower the expected, etc..

CLAIMS OR CLAIMS

1. A process for fermentation monitoring by means of a mass balance methodology in which:
 - (a) starting chemical species concentrations are measured;
 - (b) one or all of the products formed are dynamically measured;
 - (c) the reaction is monitored/described via a dynamic mass balance calculation as the fermentation proceeds to completion.
2. A process for fermentation monitoring according to claim 1 applied to a flow-through system.
3. A process of fermentation control relying on the methodology of claim 1 wherein the timing for control interventions is gauged, and the